

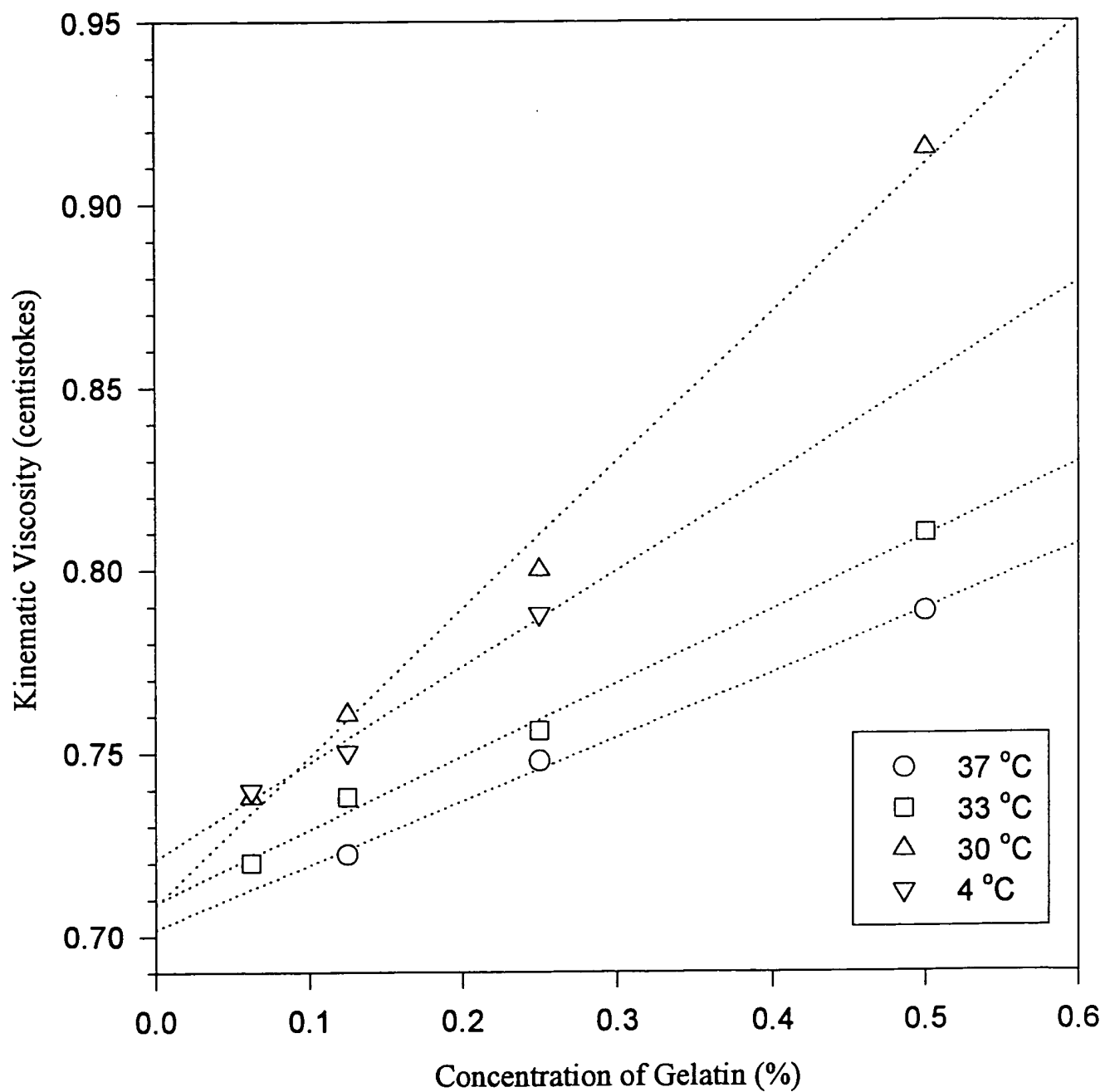
Selected Bone Grafting Materials				
Graft Material	Category	Physical Form	Distributor	Notes
Collagraft	conductive	Paste of Collagen TCP and HA	Zimmer	Inappropriate for large grafts. HA not resorbable. Expensive.
Norian	conductive	Reactive Paste which solidifies	SRS	New, interesting results, so far. Inappropriate for large grafts
Coralline HA	conductive	Calcined Coral 'Foam' of HA	Interpore	Good mechanical properties, difficult handling.
Powdered HA	conductive	Particulate HA, in a variety of presentations	Numerous	Problems with migration from implant site. Not resorbable.
Bioglass	conductive	SiO <sub>2</sub> , Na <sub>2</sub> O, CaO, P <sub>2</sub> O <sub>5</sub> , glass, forms HA-carbonate <i>in-vivo</i>	U.S. Biomaterials	Problems with migration from implant site. Not resorbable.
Autograft bone	inductive	Usually iliac or tibial crest wedge or just marrow	N/A	Up to > 20% explant site morbidity. (Younger)
Allograft whole bone	conductive or inductive	Whole Bone Segments or chips, often including articular components. Either Frozen or Freeze-dried	University of Florida Tissue Bank, (UFTB), other tissue banks	Inductive if processing and sterilization is limited. Conductive if over-processed. Perceived problem with disease transmission.
Grafton	inductive	DBM in Glycerol matrix, provided pre-loaded in syringe	Osteotech	Problems with migration from implantation site. (Frenkel) 778 Glycerol is a neurolytic agent.
DBM	inductive	Powdered or Chips, provided Freeze-dried	UFTB, other tissue banks	Problems with migration from implantation site. (Lasa; Frenkel)

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Bone Demineralization Procedure		
Step No.	Procedure	Purpose
1	harvest long bones aseptically, remove adherent tissue	
2	grind bones at 4°C to 80 microns minimum size	powder demineralizes more rapidly
3	soak at 4°C in hydrogen peroxide (3%), 24 hours	oxidizes proteins, reduces antigenicity, antiseptic
4	soak at 4°C in 70% ethanol, 24 hours	defatting of bone, reduces antigenicity, antiseptic
5	soak at 4°C in 0.5N HCl, 24 hours	dissolves and removes mineral components, removes acid soluble proteins, reduces antigenicity, antiseptic
6	sieve to separate particles in ranges 80-400 $\mu\text{m}$ , >400 $\mu\text{m}$ , and <80 $\mu\text{m}$ , discard 80 $\mu\text{m}$	80-400 $\mu\text{m}$ fraction is sold as DBM powder, >400 $\mu\text{m}$ is sold as chips, <80 $\mu\text{m}$ is engulfed by macrophagic activity <i>in vivo</i> and is ineffective, so it is discarded
7	lyophilize	allows storage at room temperature for up to 4 years, reduces antigenicity

Figure 2.

Figure 3. Kinematic Viscosity (centistokes) versus Concentration (%) of Human Gelatin Processed at Various Temperatures in Phosphate Buffered Saline Solution



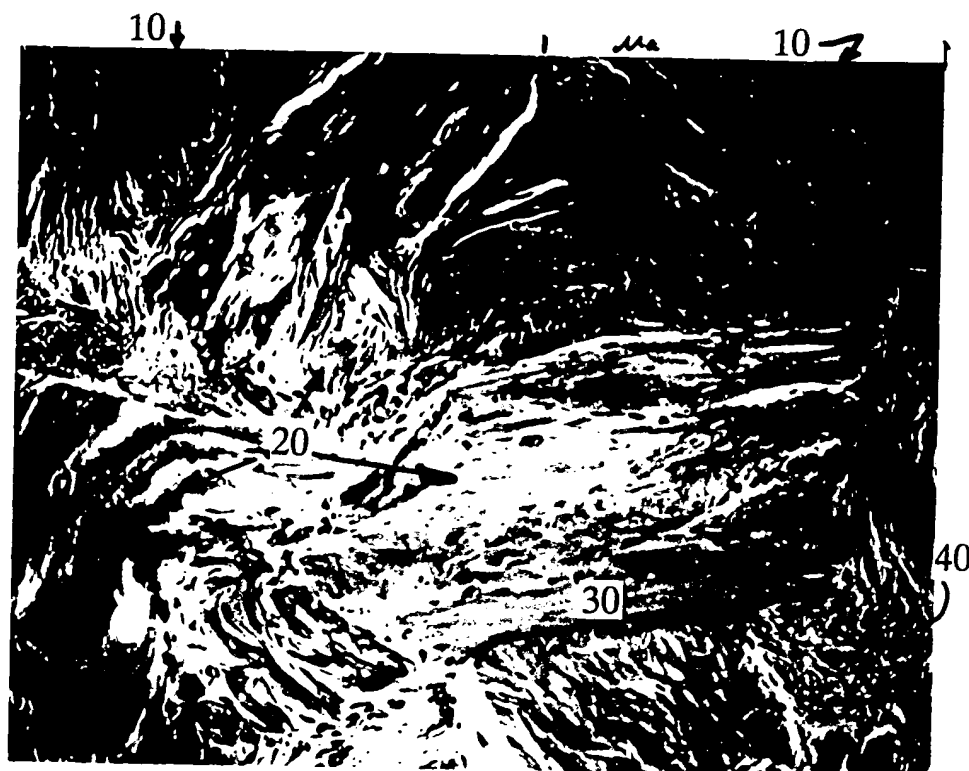


FIG. 4A

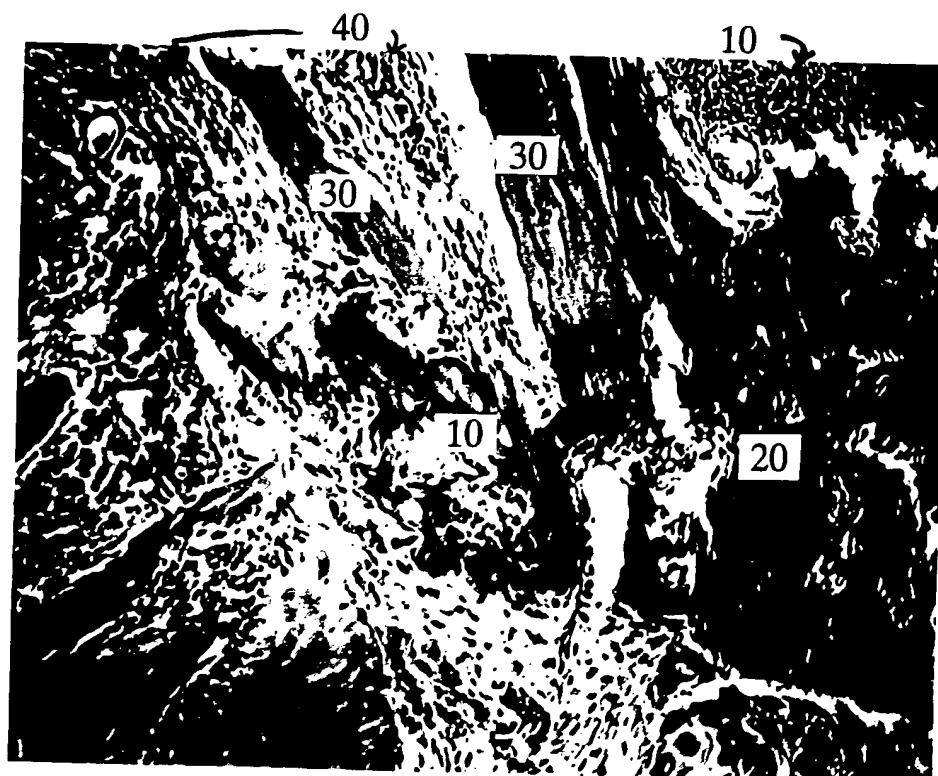


FIG. 4B

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